

Converting Any Fraction to a Decimal (by Dividing)

CAF 1

Instructions: Use 'decimal division' to convert these fractions into decimal values. These all have non-repeating digits. Be sure to show your work!

1 $\frac{2}{5} = \underline{0.4}$

$$\begin{array}{r} 0.4 \\ 5 \overline{)2.0} \\ \underline{-20} \\ 0 \end{array}$$

2 $\frac{1}{4} = \underline{0.25}$

$$\begin{array}{r} 0.25 \\ 4 \overline{)1.00} \\ \underline{-8} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

3 $\frac{3}{4} = \underline{0.75}$

$$\begin{array}{r} 0.75 \\ 4 \overline{)3.00} \\ \underline{-28} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

4 $\frac{3}{8} = \underline{0.375}$

$$\begin{array}{r} 0.375 \\ 8 \overline{)3.000} \\ \underline{-24} \\ 60 \\ \underline{-56} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

5 $\frac{1}{8} = \underline{0.125}$

$$\begin{array}{r} 0.125 \\ 8 \overline{)1.000} \\ \underline{-8} \\ 20 \\ \underline{-16} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

6 $\frac{5}{8} = \underline{0.625}$

$$\begin{array}{r} 0.625 \\ 8 \overline{)5.000} \\ \underline{-48} \\ 20 \\ \underline{-16} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

Repeating Decimals from Fractions

CAF 2

Instructions: Use 'decimal division' to convert these fractions into decimal values. These all have repeating digits. Be sure to show your work!

Example

$$\frac{1}{6} = \underline{0.1\bar{6}}$$

$$\begin{array}{r} 0.166 \\ 6 \overline{) 1.000} \\ \underline{-6} \\ 40 \\ \underline{-36} \\ 40 \\ \underline{-36} \\ 4 \end{array}$$

same pattern in division means a repeating decimal

1 $\frac{1}{9} = \underline{0.1\bar{1}}$

$$\begin{array}{r} 0.11 \\ 9 \overline{) 1.00} \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 1 \end{array}$$

2 $\frac{5}{9} = \underline{0.5\bar{5}}$

$$\begin{array}{r} 0.55 \\ 9 \overline{) 5.00} \\ \underline{-45} \\ 50 \\ \underline{-45} \\ 5 \end{array}$$

3 $\frac{5}{12} = \underline{0.41\bar{6}}$

$$\begin{array}{r} 0.4166 \\ 12 \overline{) 5.0000} \\ \underline{-48} \\ 20 \\ \underline{-12} \\ 80 \\ \underline{-72} \\ 80 \\ \underline{-72} \\ 8 \end{array}$$

4 $\frac{3}{11} = \underline{0.2\bar{7}}$

$$\begin{array}{r} 0.2727 \\ 11 \overline{) 3.0000} \\ \underline{-22} \\ 80 \\ \underline{-77} \\ 30 \\ \underline{-22} \\ 80 \\ \underline{-77} \\ 3 \end{array}$$

Long Repeating Decimals from Fractions

CAF 3

Instructions: Use 'decimal division' to convert these fractions into decimal values. These all have long decimal parts, so **round off** to **three** decimal places. Be sure to show your work!

Example

$$\frac{1}{7} = \underline{0.143}$$

$$\begin{array}{r} 0.1428 \\ 7 \overline{) 1.0000} \\ \underline{- 7} \\ 30 \\ \underline{- 28} \\ 20 \\ \underline{- 14} \\ 60 \\ \underline{56} \end{array}$$

let's just stop here and round off our answer

1 $\frac{3}{7} = \underline{0.429}$

$$\begin{array}{r} 0.4285 \\ 7 \overline{) 3.0000} \\ \underline{- 28} \\ 20 \\ \underline{- 14} \\ 60 \\ \underline{- 56} \\ 40 \\ \underline{- 35} \\ 5 \end{array}$$

2 $\frac{6}{7} = \underline{0.857}$

$$\begin{array}{r} 0.8571 \\ 7 \overline{) 6.0000} \\ \underline{- 56} \\ 40 \\ \underline{- 35} \\ 50 \\ \underline{- 49} \\ 10 \\ \underline{- 7} \\ 3 \end{array}$$

3 $\frac{5}{13} = \underline{0.385}$

$$\begin{array}{r} 0.3846 \\ 13 \overline{) 5.0000} \\ \underline{- 39} \\ 110 \\ \underline{- 104} \\ 60 \\ \underline{- 52} \\ 80 \\ \underline{- 78} \\ 2 \end{array}$$

4 $\frac{2}{17} = \underline{0.118}$

$$\begin{array}{r} 0.1176 \\ 17 \overline{) 2.0000} \\ \underline{- 17} \\ 30 \\ \underline{- 17} \\ 130 \\ \underline{- 119} \\ 110 \\ \underline{- 102} \\ 8 \end{array}$$

Converting with a Calculator

CAF 4

Instructions: The following fractions have been converted to decimals with a calculator. Round the answers off to **three** decimal places or use the repeat symbol to shorten the answer if you see a repeating pattern.

1 $\frac{2}{7} = 0.2857142... = \underline{0.286}$

2 $\frac{7}{9} = 0.7777777... = \underline{0.\overline{7}}$

3 $\frac{15}{21} = 0.7142857... = \underline{0.714}$

4 $\frac{19}{33} = 0.5757575... = \underline{0.5\overline{7}}$

5 $\frac{9}{14} = 0.6428571... = \underline{0.643}$

6 $\frac{9}{23} = 0.3913043... = \underline{0.391}$

7 $\frac{8}{11} = 0.7272727... = \underline{0.7\overline{2}}$

8 $\frac{6}{19} = 0.3157894... = \underline{0.316}$

9 $\frac{7}{22} = 0.3181818... = \underline{0.31\overline{8}}$

10 $\frac{11}{12} = 0.9166666... = \underline{0.91\overline{6}}$

Instructions: Use a calculator to convert these fractions to decimals. Round off to **three** decimal places or use the repeat symbol if you see a repeating pattern.

1 $\frac{4}{7} = \underline{0.571}$

2 $\frac{12}{17} = \underline{0.706}$

3 $\frac{12}{13} = \underline{0.923}$

4 $\frac{15}{22} = \underline{0.6\overline{81}}$

5 $\frac{10}{11} = \underline{0.9\overline{0}}$

6 $\frac{3}{13} = \underline{0.231}$

7 $\frac{16}{31} = \underline{0.516}$

8 $\frac{4}{3} = \underline{1.\overline{3}}$